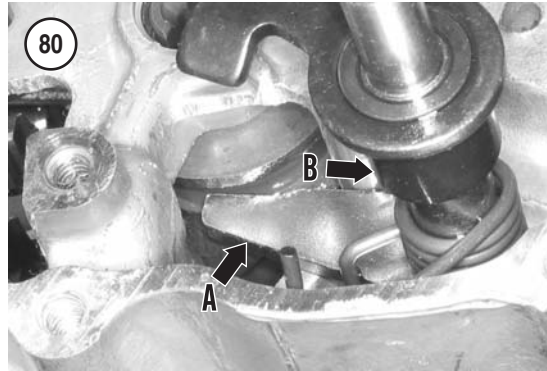


4. Hold down the reverse arm (A, **Figure 80**) with a screwdriver, then remove the reverse shaft (B) assembly.
5. On FE and TE models, the reverse shaft assembly is only available as a unit assembly. Inspect the reverse shaft assembly (**Figure 81**) for:
 - a. Weak or damaged spring.
 - b. Damaged reverse shaft.
6. On FM and TM models, inspect the reverse shaft assembly (**Figure 82**) for:
 - a. Weak or damaged spring.
 - b. Damaged reverse shaft.
 - c. Damaged circlip groove.
7. Install the reverse shaft assembly by reversing the preceding removal steps while noting the following:
 - a. When installing the reverse shaft (B, **Figure 80**), insert the end of the reverse arm (A) into the shift drum groove.
 - b. Position the bottom leg of the spring against the crankcase bottom (**Figure 83**), then push the lower spring end inward so the spring end is flat against the crankcase.



OIL PUMP

The oil pipes and oil pump assemblies are mounted on the front side of the engine. The oil pump consists of two stages. One side of the pump transfers oil from the bottom of the crankcase to an oil chamber in the crankcase. The remaining side of the pump forces oil from the oil chamber to the engine components.

The oil pump can be removed with the engine mounted in the frame. The following illustrations depict the engine removed for clarity.

Refer to **Figure 84**.

Removal/Installation

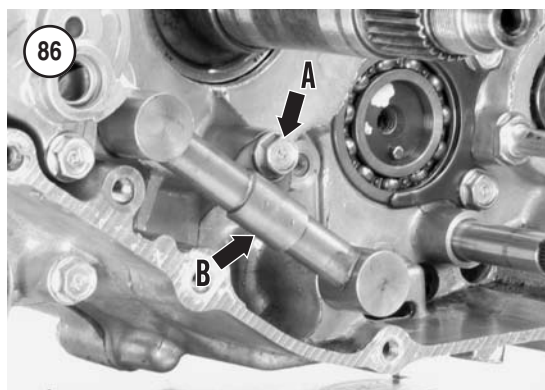
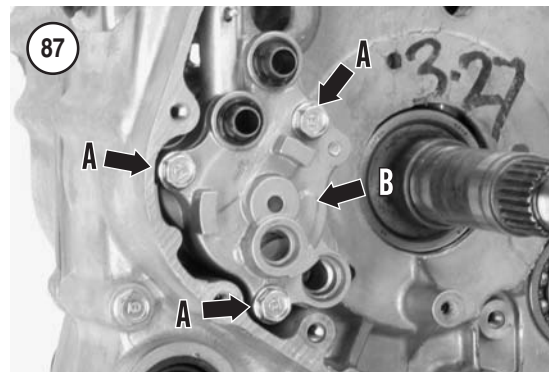
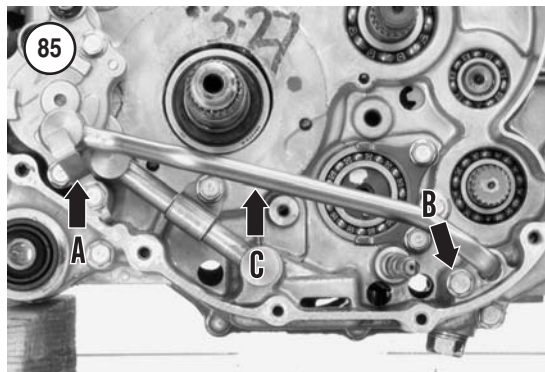
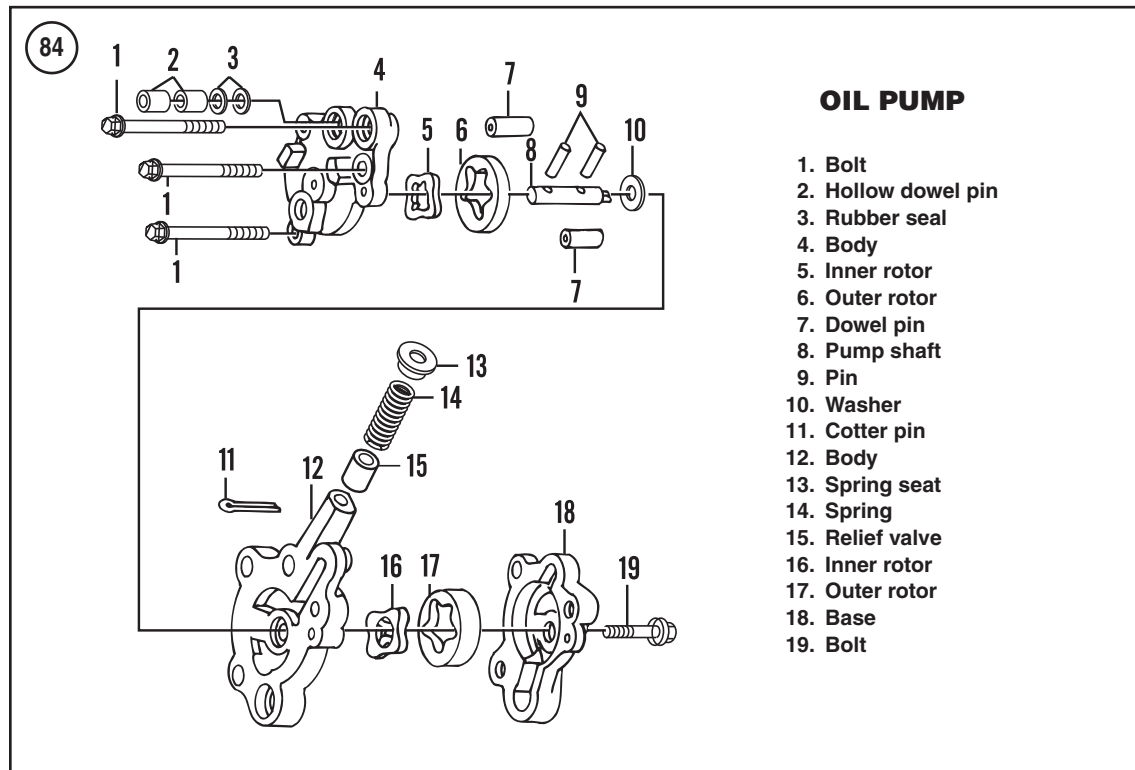
1. Remove the front crankcase cover as described in this chapter.

NOTE

Clutch removal is not necessary, but the clutch was removed in the following illustrations for clarity.

2. Remove the oil transfer pipe retaining bracket (A, **Figure 85**). Remove the retaining bolt (B), then remove the oil pipe (C).



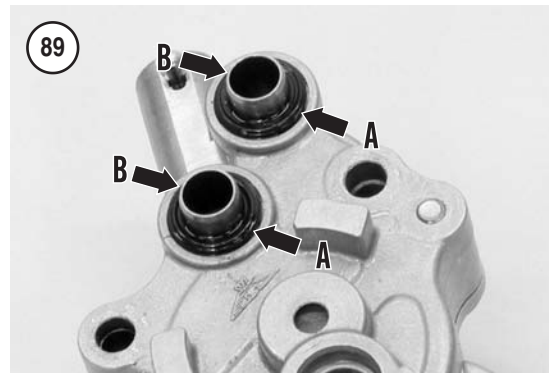
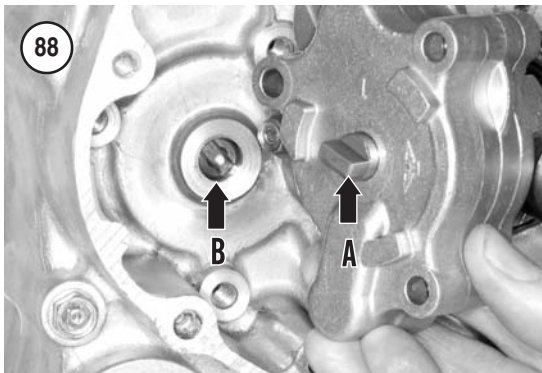


3. Remove the oil scavenge pipe retaining bolt (A, **Figure 86**), then remove the oil pipe (B).
4. Remove the oil pump retaining bolts (A, **Figure 87**), then remove the oil pump (B).

NOTE

If the oil pump is not going to be serviced, store it in a plastic bag.

5. Service the oil pump as described in this section.
6. Install the oil pump by reversing the preceding removal steps while noting the following:



- Align the shoulder on the end of the pump shaft (A, **Figure 88**) with the slot in the end of the balancer shaft (B) and install the oil pump.
- Install and tighten the oil pump mounting bolts securely (A, **Figure 87**).
- Install new rubber O-rings (**Figure 79**) on both oil pipes.

Disassembly

- Remove the rubber seals (A, **Figure 89**) and hollow dowel pins (B) if they were not previously removed.
- Remove the cotter pin (**Figure 90**), then remove the spring seat (A, **Figure 91**), spring (B) and relief valve (C).
- Remove the bolt (A, **Figure 92**) and pump base (B).

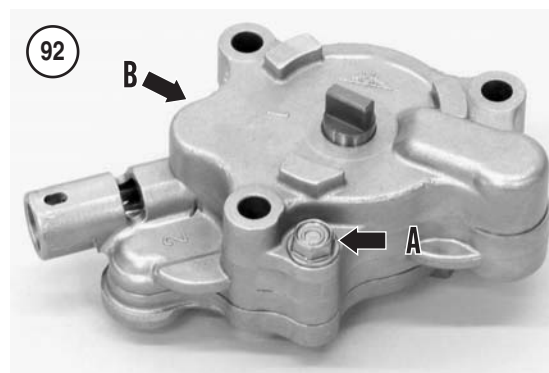
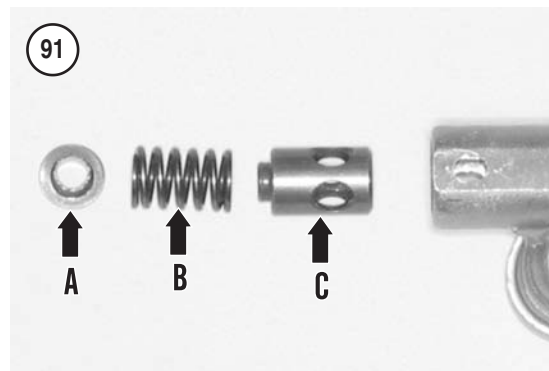
NOTE

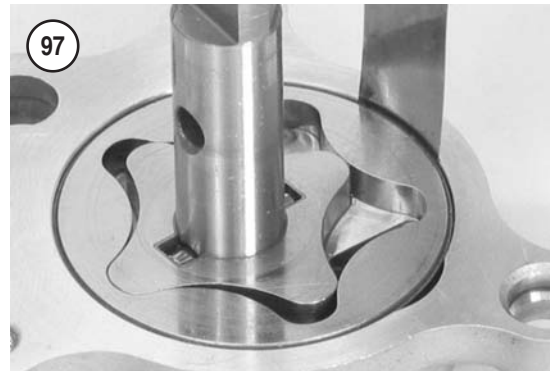
If the rotors are not marked, mark them so they can be installed in their original positions.

- Remove the inner and outer rotors. See **Figure 93**.
- Remove the drive pin (A, **Figure 94**) and thrust washer (B).
- Remove the spacer from the pump body.
- Remove the pump shaft (A, **Figure 95**), drive pin, dowel pins (B) and rotors (C) from the pump body.

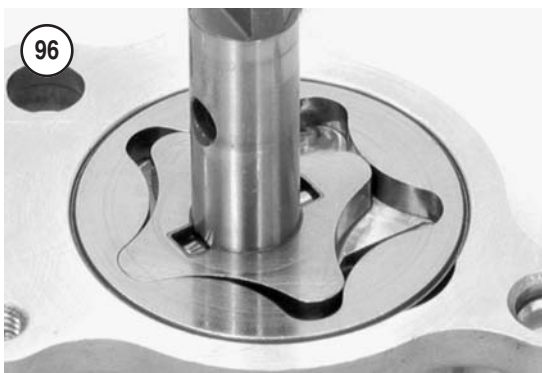
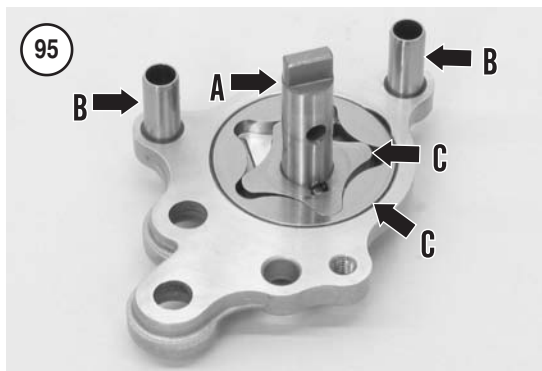
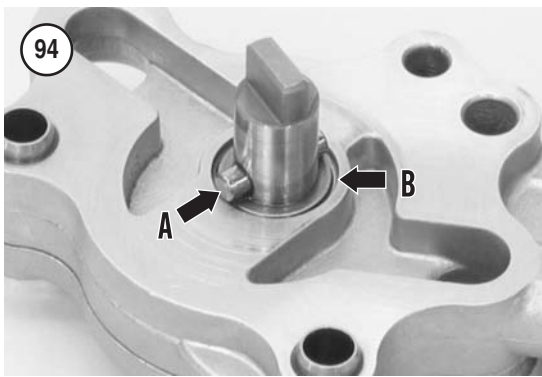
Cleaning and Inspection

An excessively worn or damaged oil pump will not maintain oil pressure and should be repaired or replaced before it causes engine damage. Inspect





5



the oil pump carefully when troubleshooting a lubrication or oil pressure problem.

Refer to **Table 3** when measuring the oil pump components in this section. Replace parts that are out of specification or show damage as described in this section.

1. Clean and dry all parts. Place the parts on a clean, lint-free cloth.
2. Check the pump shaft for scoring, cracks or signs of heat discoloration.
3. Check the oil pump base, body and spacer for:
 - a. Warped or cracked mating surfaces.
 - b. Rotor bore damage.
4. Check the oil pump rotors for:
 - a. Cracked or damaged outer surface.
 - b. Worn or scored inner mating surfaces.
5. If the oil pump base, body, spacer and all rotors are in good condition, check the operating clearances as described in Steps 6-7.

NOTE

The pump rotors are sold separately. The pump base, body, spacer and pump shaft are available only as a new pump unit.

6. Install the respective inner and outer rotors and pump shaft into the pump body (**Figure 96**).
7. Using a flat feeler gauge, measure the clearance between the outer rotor and the oil pump body (**Figure 97**) and check it against the body clearance in **Table 3**. If it is out of specification, replace the outer rotor and remeasure it. If it is still out of specification, replace the oil pump assembly.
8. Using a flat feeler gauge, measure the clearance between the inner rotor tip and the outer rotor (**Figure 98**) and check it against the tip clearance in **Table 3**.

ble 3. If it is out of specification, replace the inner and outer rotors.

9. Using a flat feeler gauge and straightedge, measure the clearance between the body surface and rotors (**Figure 99**) and check it against the side clearance in **Table 3**. If it is out of specification, replace the oil pump assembly.

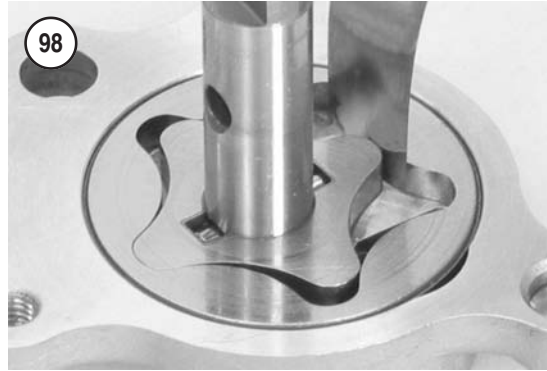
Reassembly

1. If necessary, reclean the parts as described in the previous section. Lubricate the rotors, base, body and spacer with engine oil when installing them in the following steps.
2. Install the outer and inner rotors (C, **Figure 95**) into the pump body. When installing the original rotors, install them with their original side facing up as identified during disassembly.
3. Install the pump shaft (A, **Figure 95**) and drive pin into the inner rotor. The flat end of the shaft must be out.
4. Install the dowel pins (B, **Figure 95**) into the pump body.
5. Install the spacer onto the pump body.
6. Install the thrust washer (B, **Figure 94**) and drive pin (A).
7. Install the inner and outer rotors into the pump base (**Figure 93**). When installing the original rotors, install them with their original side facing up as identified during disassembly.
8. Mate the pump base with the body/spacer assembly. Make sure the pump shaft drive pin aligns with the slot in the inner rotor.

NOTE

Be sure there are no gaps between the mating surfaces of the pump base, spacer and body. If a gap exists, disassemble the pump and find the cause.

9. Install and tighten the bolt (A, **Figure 92**).
10. Turn the pump shaft. If there is any roughness or binding, disassemble the oil pump and check it for damage.
11. Lubricate the relief valve and spring with engine oil. Install the relief valve (C, **Figure 91**) so the stepped end is toward the spring. Install the spring (B, **Figure 91**) and spring seat (A). Push in the spring seat and install the cotter pin (**Figure 90**). Bend the cotter pin ends around the pump.



12. Store the oil pump in a plastic bag until installation.

OIL STRAINER SCREENS

Two oil strainer screens are installed inside the crankcase. Service the oil strainer screens whenever splitting the crankcase. Refer to *Crankcase and Crankshaft* in this chapter.

CRANKCASE AND CRANKSHAFT

The crankcase is made in two halves of thin-wall, precision diecast aluminum alloy. To avoid damage, do not hammer or pry on any of the interior or exterior projected walls. A liquid gasket seals the crankcase halves while dowel pins align the crankcase halves when they are bolted together. The crankcase halves can be replaced separately.

The crankshaft assembly consists of two full-circle flywheels pressed together on a crankpin. Two ball bearings in the crankcase support the crankshaft assembly.

Copyright of Honda TRX350 RANCHER, 2000-2006 is the property of Penton Media, Inc. ("Clymer") and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.